# DIAGNOSTIC TEST OF LEARNING DISABILITY

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## INTRODUCTION

The behavioral analysis of the school going population reveals that not all are able to be efficient learners. Children fail to learn, due to a variety of reasons and difficulties, such as intellectual handicap (MR), sensory handicap (visual or hearing impairment) or social-environmental factors (psycho-social). However, these categories do not exhaust the entire population of poor performers. There is still a group of children who fail to learn and defies any of the existing categories of exceptionality. These are the learning disabled children. Learning Disability, as defined by Hammilt. al. (1981) is "a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to Central Nervous System dysfunction". Learning Disability, thus defined, encompasses a variety of skills and sub-skills, the integration of which is required for effective learning.

The identification of learning disability in a child has been a problem due to various reasons. Firstly, the concept of Learning Disability being vague, specific tools to identify the Learning Disabled is not available. Secondly, the controversy regarding the identification criteria of achievement-potential discrepancy has not yet been resolved, so no specific procedure and tools are available for a conclusive diagnosis. However, in our country from a host of available tests, few are indigenous. In the dearth of specific goal-directed diagnostic test, one had till now to depend upon the conventional norm-referenced psychological tests which though not diagnostic in nature, are used for a diagnosis. Hence, a need to develop a diagnostic tool for the identification of the Learning Disabled (LD) was perceived by the researchers and as a result, the Diagnostic Test of Learning Disability (DTLD) was prepared.

The DTLD is a tool constructed to identify those children, who experience learning problems, because of learning disability. Since learning disability could span over a variety of abilities, ten areas, each representing a basic

psychological process, have been selected. A deficit in any of the area or areas or a combination of any, would lead to a learning problem.

The first six areas represent the processes involved in visual & auditory perception, viz.

(1) Eye-hand Co-ordination (EHC)
(2) Figure Ground Perception (FG)
(3) Figure Constancy (FC)
(4) Position-in-Space (PS)
(5) Spatial Relations (SR)
(6) Auditory Perception (AP)

Four areas, from subtest no. 7 to 10 represent the aspects of cognitive functioning, viz.

(7) Memory (M)
(8) Cognitive Abilities (CA)
(9) Receptive Language (RL)
(10) Expressive Language (EL)

Though no line of demarcation can be drawn between the perceptual and cognitive areas, yet for the purpose of analysis and diagnosis, the two have been separated. They should not be understood as two broad categories in which the symptoms of problem are manifested.

However, though the areas have been classified separately, not all can be put into discrete groups, for some amount of overlapping is inevitable. The flow from the perceptual areas to the cognitive areas is a smooth one for as in the words of Marianne Frostig (1964) "the Percepts born of Perception are the building blocks for the thought". Perception makes the process of thinking easier by providing the concrete first-hand experience and symbols that facilitate thought. In the DTLD, we therefore, move from a perceptual to a cognitive domain incorporating thinking, memory, receptive and expressive language later to give us an insight into the subject's overall cognitive structure. The purpose for this diagnostic tool is to find the locus of the problem and to provide a sound basis for a structured and an effective remedial programme. The DTLD can be administered individually as well as in group.

What will emerge from the DTLD is the profile showing the subject's abilities and disabilities. An attempt here is made to get a cumulative picture of the

subject's abilities and disabilities, so that he is not subjected to a series of tests to be qualified as a LD, but just one effective diagnostic tool would suffice for a child's placement in the class for the LD in a school programme. Diagnosis would be based on the analysis of the subject's test performance, which would become the basis for effective remediation.

## TEST DESCRIPTION

### Subtest I: Eye-Hand Co-ordination (EHC)

Measures the ability to co-ordinate vision with the movements of the hands for effective use. This subtest assesses the graphic motor sequencing ability and the quality of the movement, i.e. smooth, controlled and continuous, so imperative for writing. Subjects having hand-writing problems because of dysgraphia will score low on this subtest.

### Subtest II: Figure Ground Perception (FG)

Also called Selective Attention. It is the ability to attend only to that stimulus which require one's attention at a given period and ignore the other stimuli present in order to encode the perceptual experience meaningfully. It measures the subject's ability to select, control and direct attentional processes leading to clear perception.

### Subtest III: Figure Constancy (FC)

It is the subject's ability to identify symbols, figures, shapes despite its apparent change in size, direction and position. It involves the recognition of pictures, shapes, graphics, symbols, letters and figures. It also entails the transfer of the visual imprint from a three-dimensional to a two-dimensional level. The aim of this subtest is to test whether or not the subject has conserved the important perceptual details about shapes, graphics, letters, so relevant for any reading or writing activity, e.g. A is an 'A' be it in capital, small or cursive form.

**Subtest IV: Position-in-Space (PS)**

Measures the ability to perceive the relationship between the observer and the object in space, i.e. of it being above, below, behind, in front of, next to etc. to the person observing. This grows out of the individual's inherent ability to organize and see order in space. It is also necessary that he comprehends words designating position in space when he reads or hears it, for adequate comprehension.

**Subtest V: Spatial Relation (SR)**

Tests the ability to see a relationship between two or more objects in relation to self and in relation to each other. It is an outgrowth of position-in-space. A child needs an adequate SR for matching blocks, copying patterns, completing incomplete pictures and also doing reading, writing, spelling and arithmetic, comprehending graphs, maps etc. This becomes the basis for processing information at an abstract level later. It involves simultaneous processing in various directions and thought flexibility.

**Subtest VI: Auditory Perception (AP)**

Refers to an ability to provide meaning to auditory stimuli.

**Item No. 1:** This subtest represents auditory reception of non-verbal information, basis for any learning and rules out a sensory impairment.

**Item No. 2:** Tests the auditory sequencing, an outgrowth of auditory-reception. It assesses one's encoding ability, a pre-requisite for any language—learning, reading, spelling, and writing, at a later stage.

**Item No. 3:** Represents auditory discrimination. It tests the subject's ability of phonemic analysis and segmentation. Phonemic discrimination is important for phonemic awareness, again basic for reading, and consequently comprehension.

**Item No. 4:** Measures the subject's phonemic association and indirectly his verbal fluency. Possessing a repertoire of vocabulary is essential for completing the task.

## Subtest VII: Cognitive Abilities (CA)

**Item No. 1:** Represents the subject's ability to manipulate the stimuli in reversed order, i.e. reverse the stimulus letters and numbers. It calls for a cognitive retracing.

**Item No. 2:** Tests the subject's ability of categorization. Indirectly it also measures the level of his cognitive processing, involving encoding and memory of the input from the range of his experiential world. Prior knowledge of the distinguishing features of each item given and the class they belong to is required to enable the subject to perform correctly.

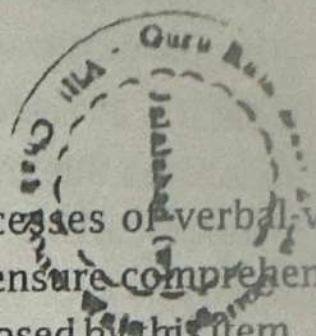
**Item No. 3:** The ability to recognize the subtle difference within its common category, is required for adequate task performance. From the given 6 balloons, he has to perceive the difference in their shapes and make groups on that basis. This measures the subject's higher level processing abilities, i.e. see variance within the homogeneity. The ability to abstract the similarities and recognize the differences to categorize the experience in meaningful chunks is measured by this item. This ability facilities concept formation which further leads to higher level of cognitive functioning.

**Item No. 4:** This also represents higher level cognitive processing abilities. The subject first has to generalize the characteristics/qualities the given pair of stimulus items has in common within the framework of apparent difference that both are not the same. Yet more processing has to be undertaken to mention two common features that the given pair has. The subject is expected to trace some homogeneity within the given variance. This item assesses simultaneously the abilities of abstraction, categorization and generalization. All these require higher level processing of incoming information. Children who have processed information at these various levels would be able to organize their thoughts adequately and answer the items correctly.

## Subtest VIII: Memory (M)

Tests the necessary facilitator for almost all learning. The items nos. 1 and 2 aim at measuring the child's memory at a surface level and item no. 3 measures it at a deeper level. The subject's range of observation and

knowledge could be measured by these items and one may also determine the extent to which the subject is capable of some incidental learning, by retrieving relevant information at an appropriate time.



**Subtest IX: Receptive Language (RL)**

**Item No. 1:** It aims at testing the encoding processes of verbal-visual stimuli, i.e. spontaneous semantic processing to ensure comprehension. The problems in input and processing can be diagnosed by this item.

**Item No. 2:** It aims at testing the subject's verbal fluency, whereby he is expected to make new words. Though an element of expression is inherent here, the focus is on understanding the given instructions and performing accordingly.

**Item No. 3 and 4:** It test the subject's verbal fluency which is generally related to long term memory level, and the retrieval. It also throws light on the subject's skill of observation, exposure, vocabulary and potential for incidental learning.

**Subtest X: Expressive Language (EL)**

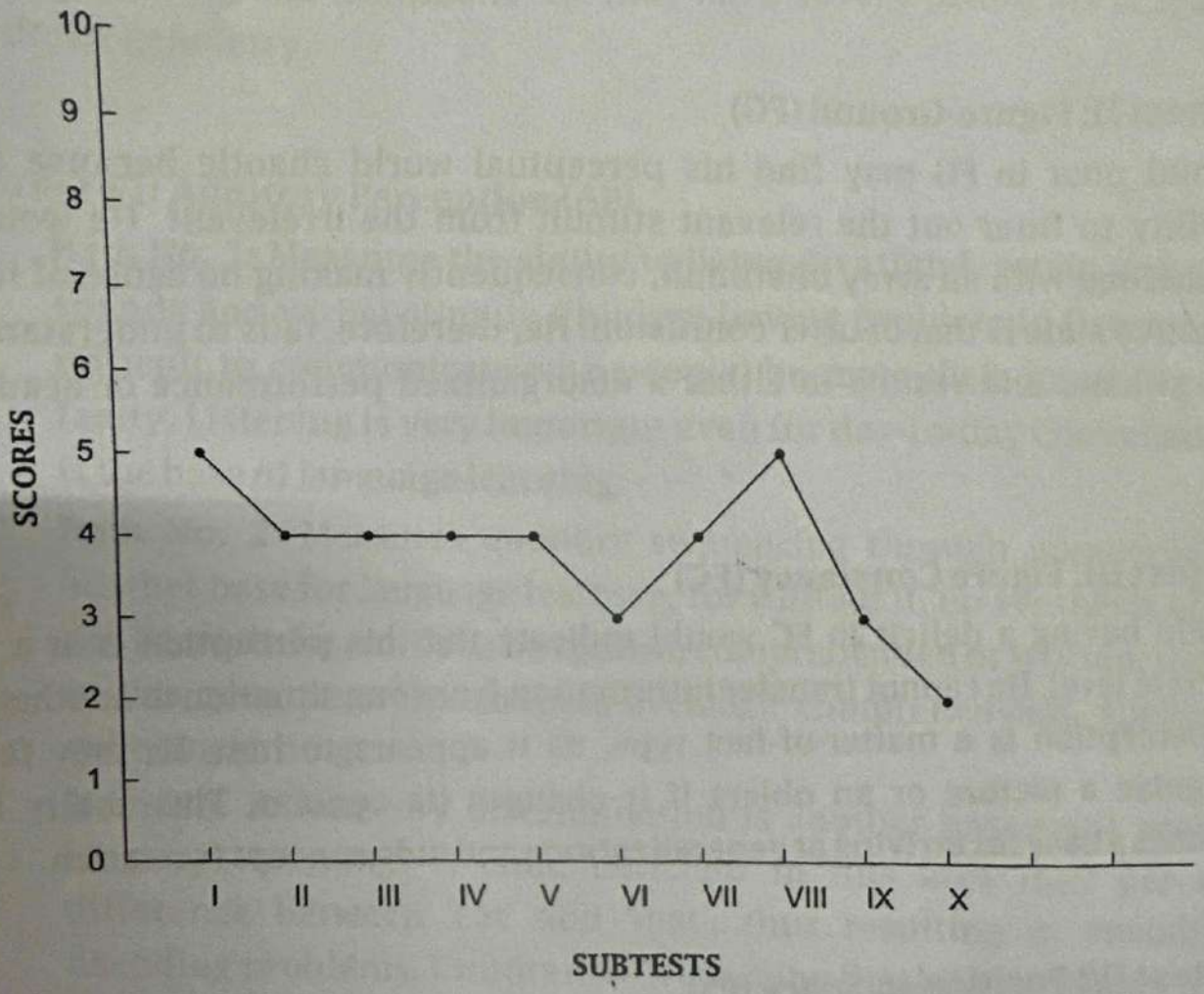
**Item No. 1:** Tests the subject's ability to use proper syntax in language. The type of response he gives would indicate whether his level of language is at a concrete descriptive level or is at a higher level where he processes the information more abstractly, i.e. stating the function and the like rather than just naming the figure.

**Item No. 2:** Aims at testing the subject's awareness of syntactical structures and meta-linguistic structures.

**Item No. 3:** Aims at testing the subject's perceptual reception of the stimulus, find out the correct words in his lexical structure to represent the stimulus and use the words in correctly formed sentences. In other words, it tests the subject's semantic syntactic co-ordination abilities. It altogether assesses the subject's perceptual awareness, visuo-motor integration and level of language expression.

## Profile:

A profile of the subject's scores in all ten areas is prepared and interpreted. The profile indicates the strengths and weaknesses of the subject in ten areas. A score of three or below in an area may be considered as indicator of severe weakness. However, a relative strength of the area in terms of scores indicates in which area remediation is required. A total score of 30 or below means severe learning disability. For further confirmation of diagnosis one may find out intelligence achievement discrepancy.




**A sample of profile of a learning disabled child**

In the above profile one observes a deficiency in the area of Auditory Perception. Deficient auditory perception will impact language learning negatively. Thinking and language are closely related, for language is a tool of thought. The poor performance hence in Cognitive Abilities, Receptive and Expressive Language is an outfall of a deficient auditory perceptual process. This child's performance in visual-perception also shows deficiency. Hence, a rich Perceptual and Language Intervention Program is recommended.

## DISCUSSION

### Subtest I: Eye-hand Co-ordination (EHC)

A child having deficit in EHC would indicate some difficulty with the control of movements, required for a smooth flow of writing. Such a child, may not have encoding deficits, consequently he may be able to read, spell and comprehend, and may also be good at any oral work. However the visual-motor production deficits due to problems in EHC, encountered by such a child, hamper his scholastic performance considerably often resulting in dire consequences.

### Subtest II: Figure-Ground (FG)

A child poor in FG may find his perceptual world chaotic because of his inability to filter out the relevant stimuli from the irrelevant. He would be bombarded with an array of stimuli, consequently making no sense of it—his cognitive state is that of utter confusion. He, therefore, fails to understand the task at hand and results in either a disorganized performance or academic failure.

### Subtest III: Figure Constancy (FC)

A child having a deficit in FC would indicate that his perception is at a very concrete level. He cannot transfer information from one situation to another and his perception is a matter-of-fact type, as it appears to him. He may fail to recognize a picture or an object if it changes its context. This ability later becomes a base for arriving at generalizations and aids concept formation.

### Subtest IV: Position-in-Space (PS)

A child having a deficiency in PS may find his perceptual world distorted. He may have difficulties doing any accurate drawing (not aesthetic). He may also perceive no difference between 'b' and 'd', 'g' and 'q', '14', and '41' etc., this negatively affects his reading skills—consequently hampering both comprehension and content expression. In the areas of mathematics too, this deficiency can be devastating, for a child may have great difficulties in reading and writing numbers correctly, and also doing mathematical operations—masking the "real problem" as a mere procedural error. A child

thus having a deficiency in PS⁻ may experience difficulties in reading, writing, spelling and doing arithmetic. It is progressive in nature, and its concrete perceptual basis, becomes the base for operations on an abstract level, later.

## Subtest V: Spatial Relations (SR)

This is an outgrowth of PS. A child having difficulty in SR will generally have problems in doing tasks involving directionality and laterality and in reading, writing, spelling and arithmetic. He may have severe problems in measuring and doing geometry.

## Subtest VI: Auditory Perception (AP)

**Item No. 1:** Measures the ability to listen, to attend, retain and organize sounds and verbal stimuli. Children having problem in listening find it difficult to communicate with people, because their input is generally faulty. Listening is very important even for day-to-day conversation and is the base of language learning.

**Item No. 2:** Measures auditory sequencing through non-verbal items, another base for language learning, for without it, no synthesis of sounds can be made for words to be spoken, comprehended or written. Deficiency in this area severely hampers a child's comprehension, spellings and coherent writing.

**Item No. 3:** Auditory discrimination is another important segment of language learning. A child deficient in this area may perceive no difference between 'cat' and 'mat', thus resulting in encoding and decoding problems. Children with Learning Disability are known to have deficits in processing of phonemic material and indicate a developmental lag.

**Item No. 4:** Auditory association or phonemic association is an extension of auditory discrimination. A child having a deficiency in making this association may have a poor verbal repertoire which makes learning a hazardous and a laborious task for him for it may severely limit his receptive and expressive ability.

**Item No. 5:** Verbal Fluency item tests the child's vocabulary, for within the time limits given, the child has to write two words with the same alphabets which will be difficult unless he has a good word collection.

## Subtest VII: Cognitive Abilities (CA)

**Item No. 1 and Item No. 2:** Reversing the content of a given material systematically represents a higher order processing skill. Often, backward and forward movement of thought is required for comprehending some type of content. A subject having problem in this type of reversals would have difficulty in organized thinking. He could be having difficulties with PS too, for the subject may be unable to reverse the digits/letters in the correct sequence because of an inability to perceive the stimuli in their right place. Another type of a subject having difficulties with reversal would be the one with perseverative tendencies.

**Item No. 3:** This item tests the subject's level of concept formation at the classificatory level. While some subjects may be able to define the classes, each given word belongs to, some may not. It is sufficient if subjects put each word into its relevant category, any mistake here would indicate a defective concept formation.

**Item No. 4:** Measures the subject's higher order thought processes, for he is expected to discern the variation within the apparent homogeneity. It calls for finer perception and an ability to categorize, without which a correct answer cannot be given.

**Item No. 5:** Also requires higher order thought processing and a sound knowledge base, without which the task cannot be attempted. Here unlike the previous item, what is given is pair of words, apparently different, yet thought processes have to be invoked to find out the two common features in them. The subject is expected to abstract the similar qualities in the apparently different stimuli.

## Subtest VIII: Memory (M)

Items in this subtest are hierarchically ordered from simple to complex items. While item nos. 1 and 2 test memory at surface level, item no. 3 calls for observation and retention of past academic learning. Long term verbal memory is tested through this subtest. Memory is the base for any information processing and without which no application of knowledge is possible. Unless the given experience is integrated into the Long Term Memory (LTM), it cannot be retrieved. An individual having an adequate LTM has an intact mechanism

of elaborative encoding (i.e. rehearsal, coding, chunking, imagery etc.).

**Subtest IX: Receptive Language (RL)**

Since this subtest aims at testing the encoding processes of the subject, he is required to read or listen to the passage and select the right answer. A tilt towards reception is maintained by not expecting the subject to do much of writing. He merely has to tick the correct answer or write just in words. Correct receptive language would be ascertained by the subject's correct response to the questions.

**Subtest X: Expressive Language (EL)**

Language is the base for most learning and difficulties with language severely disturb and distort an individual's learning process, making learning an unpleasant experience.

**Item No.1:** Aims at testing the subject's syntactical-semantic command, and the level of his expression.

**Item No.2:** Aims at checking the subject's syntactical foundation without which proper expression cannot be expected.

**Item No.3:** Aims at measuring the subject's fluidity of thought and expression and the level of his language usage.

Because language comprehension, production and use are fundamental to any social and academic success, a subject with a language disorder is at risk in learning. Problems could occur because language is used both as the curriculum content and the learning media. In the present context, mother-tongue not being the medium of instruction has caused a serious problem in learning. Identification of a child with a language disorder therefore is best achieved by focusing on the subject's performance on language tasks, rather than making inferences about language knowledge, that underlies the performance. Subtests IX & X indicate if the language disorder is lexical (pertaining to words), syntactical (grammar) or semantic (meaning), and the interactions between form, content, and usage could reveal to us the nature of the subject's language problem and be a base for remedial education.

## STANDARDIZATION OF THE TEST

The DTLD was standardized by following the objective procedures of item-analysis and establishing reliability and validity.

### Procedure of Item Analysis:

**(i) Item selection:** The items representing each of the ten selected areas were constructed. They were given to experts and teachers for review and criticism. On the basis of their opinions and suggestions items were selected. The selected items were then, tried out on a smaller sample (N=100) std. IV (8-11 yrs) subjects. As a result, some of the items were modified and some were dropped out. The number of items and sub-items varied in different subtests.

**(ii) Item try out:** After the items were selected for the second draft of the ten subtests, they were tried out on a sample of 250 poor achievers studying in std. IV. On the basis of the second try-out the language of the items was further modified and the order of some of the items was changed. Thus the final draft of the test was prepared, and administered on a sample of 1050 children.

**(iii) Item validity:** The validity index of each item (i.e. discriminating power) was determined by the extent to which the given item discriminated among the children who differed sharply in the functions measured by the test. Biserial coefficient of correlation was calculated between the top 27% and bottom 27% of the scores on each item. The bis ranged from 0.11 to 0.43. Items which had a very low bis r were deleted from the final test. The difficulty index was calculated by averaging the percent correct in the upper and lower groups. (Garrett,1979,pg. 367). The difficulty index ranged from 0.10 to 0.95.

Cross validation was done on another parallel sample of children (N=210). The biserial coefficients of correlations between the two parallel samples ranged from 0.22 to 0.54.

### Reliability:

A test-retest reliability was established by re-administering the test after a gap of 20 days and by computing reliability coefficients for each subtest and the total test. The reliability coefficient and reliability index for the ten subtests and the total are shown in table no.1.

The index of reliability gives the maximum correlation which the given test is capable of yielding in its present form (Garrett, 1979). It may be reported in place of reliability coefficients (Guilford, 1987).

Table No. 1 **Reliability Co-efficients of DTLD**

| Type of reliability | N= 1050 | Sub-tests | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total |
| Test-Retest | | 0.65 | 0.71 | 0.72 | 0.67 | 0.61 | 0.67 | 0.75 | 0.77 | 0.61 | 0.82 | 0.80 |
| Reliability Index | | 0.81 | 0.84 | 0.83 | 0.82 | 0.78 | 0.82 | 0.87 | 0.85 | 0.79 | 0.91 | 0.87 |

**Validity:**

Validity is defined as the degree to which a test measures what it claims to measure but validity is inferred and not measured. As the APA Standards for Educational and Psychological Tests (American Psychological Association, 1974) points out, question of validity reduces to the following two:

(i) What can be inferred about what is directly being measured by the test.

In this case—visual perception, auditory perception, memory, cognitive ability, receptive and expressive language

(2) What can be inferred about other related behaviour.

In this case—learning disability.

**Content Validity:**

Content validity was established on the basis of the expert opinions and comments. The items were carefully sampled from the areas covered in the test.

**Construct Validity:**

Internal consistency is an evidence of construct validity, because the degree of homogeneity of test items indicates how well those items will measure the

trait sampled by the test. The item analysis determined the internal consistency of the test.

A further test of validity was done by administering the test on a sample of 50 std. IV average and above average performers in school examination and 50 poor performers. A chi-square test revealed that the test could differentiate between the groups of students with and without learning problems.

Table No. 2

**Validity-Index and Difficulty-Index of the Test Items of DTLD**

| Sub Tests | Validity Index (V.I.) / Difficulty Index (D.I.) | Test Items | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| I | V.I. | 0.18 | 0.18 | 0.24 | 0.11 | -- |
| | D.I. | 0.20 | 0.20 | 0.23 | 0.21 | -- |
| II | V.I. | 0.15 | 0.31 | 0.30 | 0.37 | -- |
| | D.I. | 0.14 | 0.14 | 0.60 | 0.75 | -- |
| III | V.I. | 0.12 | 0.28 | 0.19 | 0.30 | -- |
| | D.I. | 0.19 | 0.15 | 0.10 | 0.10 | -- |
| IV | V.I. | 0.28 | 0.19 | 0.37 | 0.37 | 0.19 |
| | D.I. | 0.25 | 0.10 | 0.70 | 0.85 | 0.90 |
| V | V.I. | 0.18 | 0.26 | 0.21 | -- | -- |
| | D.I. | 0.20 | 0.18 | 0.16 | -- | -- |
| VI | V.I. | 0.43 | 0.26 | 0.19 | 0.19 | 0.37 |
| | D.I. | 0.90 | 0.11 | 0.11 | 0.40 | 0.90 |
| VII | V.I. | 0.26 | 0.31 | 0.19 | 0.19 | 0.43 |
| | D.I. | 0.17 | 0.13 | 0.10 | 0.46 | 0.10 |
| VIII | V.I. | 0.20 | 0.21 | 0.37 | -- | -- |
| | D.I. | 0.15 | 0.16 | 0.80 | -- | -- |
| IX | V.I. | 0.21 | 0.30 | 0.19 | 0.27 | -- |
| | D.I. | 0.16 | 0.20 | 0.95 | 0.20 | -- |
| X | V.I. | 0.26 | 0.37 | 0.43 | -- | -- |
| | D.I. | 0.12 | 0.80 | 0.10 | -- | -- |

## The Sample:

The test was standardised on a sample of 1050 children within the age range of 8-11 years drawn from 17 private aided English medium schools of Mumbai.

Institutional variables, like number of students, medium of instruction, economic status of the school, teachers qualifications were taken into consideration while selecting the sample. All the students who were identified as low achievers in a class constituted the sample.

## Procedure of data collection:

The first draft of the DTLD was prepared following the procedure of item selection. It was administered on a smaller sample of 100 children for pilot study. The results of the pilot study were used to modify the test and the second draft was prepared which was administered on a different sample of 250 children. Few items in subtest I, III, VII & X were modified because of ambiguity and low discrimination index and thus the final draft was prepared following the procedure of item analysis. The sample of 1050 children in group of 20 was administered the final draft. The instructions were clearly read out and it was ensured that every subject in the group understood the instructions. The doubts if any, were made clear to them. There was no time limit for the test as it was not a speed and power test. The instructions were strictly adhered to. A vigilant monitoring was done because of group testing.

After the gap of 20 days, the test was re-administered on the same sample to establish test-retest reliability of each subtest and the total test. The reliability coefficient and reliability index for the ten subtests and the total are shown in table no.1.

### Instructions for Subtest No. VI-Auditory Perception (AP)

**Item 1**

Please close your eyes and listen to the sound carefully.

a) i) Clap 4 times clearly at equal intervals.

ii) Record the response in the test booklet.

(in group testing, the subjects may mark in the booklet).

b) i) Clap seven times in chunks as follows II ( 2 times) III ( 3 times) II ( 2times).

ii) Record the response.

**Item 2**

1. Read the instructions given in the booklet.
2. Familiarize the subjects with the sounds you make.

3. Make the sounds in the following sequence (each sound 4 times).

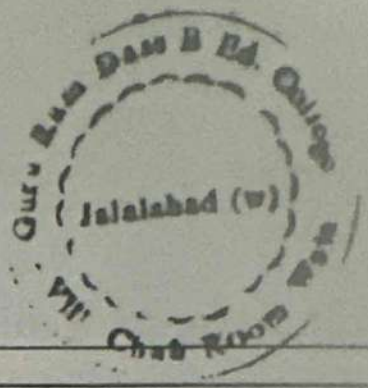
i) Tapping the table with your palm

ii) Clap

iii) Tapping the table with a pencil

iv) Finger snapping

4. Record the response in the booklet.




**Item 3:**

Read the given pair of words taking care that only one pair of words is read out at a time, and get the response recorded before reading the next pair of words. Proceed till the end. The pair of words to be read are as follows.

| | |
|---|---|
| 1. tame | tame |
| 2. ran | ran |
| 3. mat | map |
| 4. tub | tub |
| 5. them | then |

## SCORING PROCEDURE

Each item of the subtests has to be scored separately according to the instructions given. Any doubtful response has to be given a zero. The score of each area and the total composite score has to be counted and entered into the respective cells given on the first page of the booklet. It is likely that the score obtained may be in fractions, it must be entered into the profile as it is (the individual figures are not to be rounded up except the total score).

A score of 3 or less, obtained in any subtest, indicates a severe problem.

A score of 4 is indicative of a moderate problem.

A score of 5 reflects a mild problem.

A score of 6-7 in any subtest has to be checked in relation to the subjects scores in other subtests, for diagnostic purposes.

A score of 8 to 10, in any subtest, may be accepted as a relatively stronger sub-area.

For scoring strictly adhere to the following instructions.

## The Scoring Pattern

| Item No. | Maximum score | Correct Answer | Scoring |
|---|---|---|---|
| **Subtest I: Eye-hand Co-ordination (EHC)** | | | |
| 1 | 2 | 2 | for completion of the entire task without touching the line, retracing the line, or lifting the pencil at all. |
| | | 1 | if task is completed with maximum four errors, either retracing, or touching the line or lifting the pencil. |
| | | | 0 for more than 4 errors. |
| 2 | 2 | | 2 for joining all the numbers. |
| | | | 1 for joining upto 4 numbers correctly. |
| | | | 0 for joining less than 4 numbers correctly. |
| 3 | 3 | 3 | for drawing a line without retracing, touching the sides or lifting the pencil from the boy to the house. |
| | | | 2 for drawing the line with maximum 2 errors. |
| | | | 1 for drawing the line with three or four errors. |
| | | | 0 for more than 4 errors. |
| 4 | 3 | --- | 3 for each stem correctly drawn. |
| | | | 2 for 2 stems correctly drawn. |
| | | | 1 for 1 stem correctly drawn. |
| | | | 0 for none of the stems correctly drawn. |

| Item No. | Maximum score | Correct Answer | Scoring |
|---|---|---|---|
| **Subtest II: Figure Ground Perception (FG)** | | | |
| 1 | 2 | 4 circles | 0.5 for each correct response.<br>0 for all incorrect responses. |
| 2 | 2 | 5 triangles | 2 for 5 triangles ticked.<br>1 for 2-4 triangles ticked.<br>0 for less than 2 triangles ticked. |
| 3 | 4 | 4 girls | 2 for girls correctly ticked<br>(0.5 for each girl). |
| | | 3 houses | 2 for 3 houses correctly ticked.<br>1 for 2 houses correctly ticked.<br>0 for 1 house ticked or all incorrect. |
| 4 | 2 | 4 leaves<br>  | 0.5 for each correct leaf ticked.<br>0 if wrong leaf is also ticked along with other correct responses, i.e. no mark to be given if the wrong leaf is ticked. |
| **Subtest III: Figure Constancy (FC)** | | | |
| 1 | 2 | 4As. | 0.5 for each 'A' marked. |
| 2 | 3 | 3 triangles. | 1 score for each triangle marked.<br>0 for all incorrect responses. |
| 3 | 2 | the drum<br>and the house | 1 score for each rectangle marked.<br>0 for all incorrect responses. |
| 4 | 3 | 6  shapes. | 0.5 for each shape marked correctly.<br>0 for all incorrect responses. |

| Item No. | Maximum score | Correct Answer | Scoring |
|---|---|---|---|
| **Subtest IV: Position-in-space (PS)** | | | |
| 2 | 1 |  | 1 for correct drawing of the house.<br>0 for incorrect drawing. |
| 3 | 2 | | 2 marks for face with 2 eyes and 2 ears.<br>1 mark for correct outline with either 2 eyes or 2 ears drawn.<br>0 for any other. |
| 4 | 2 | 2, 1 and 5,3,4 | 2 marks for all correct answers.<br>1mark for 2-4 correct answers.<br>0 for less than 2 correct answers. |
| 1 | 1 | a) next to<br>b) in | 0.5 for each correct answer.<br>0 for any other answer. |
| 5 i) | 2 | -- | 0.5 for each correct pattern.<br>0 for all incorrect patterns. |
| ii) | 2 | -- | 0.5 for each correct pattern.<br>0 for all incorrect patterns. |
| **Subtest V: Spatial Relations (SR)** | | | |
| 1 | 2 | (i) chair<br>(ii) chair | 1 mark for each correct answer.<br>0 for both incorrect answers. |
| 2 | 5 | (i) green<br>(ii) blue<br>(iii) left<br>(iv) left<br>(v) red | 1 mark for each correct answer.<br>0 for all incorrect answers. |

| Item No. | Maximum score | Correct Answer | Scoring |
|---|---|---|---|
| 3 | 3 | -- | 3 marks for all the 3 patterns copied correctly.<br>2 marks for any 2 patterns copied correctly.<br>1 mark for any 1 pattern copied correctly.<br>0 for incorrect patterns. |

**Subtest VI: Auditory Perception (AP)**

| | | | |
|---|---|---|---|
| 1 | 1 | (a) 4<br>(b) 7 | 1 mark for both correct answers.<br>0.5 marks any one correct answer.<br>0 for both incorrect answers. |
| 2 | 2 | clap<br>finger snapping; tapping the table with your palm; tapping the table with a pencil; | 0.5 for each correct answer.<br>0 for all incorrect answers. |
| 3 | 3 | 1) same<br>2) same<br>3) different<br>4) same<br>5) same | 3 marks for 5 correct answers.<br>2 marks for 4 correct answers.<br>0 mark for 2 or less correct answers. |
| 4 | 2 | i) fur<br>ii) hay<br>iii) pity<br>iv) bread | 0.5 for each correct answer.<br>0 for all incorrect answers. |

| Item No. | Maximum score | Correct Answer | Scoring |
|---|---|---|---|
| 5 a | 1 | | 0.5 for each correct answer.<br>0 for both incorrect answers. |
| b | 1 | | 0.5 for each correct answer.<br>0 for all incorrect answers. |
| **Subtest VII: Cognitive Abilities (CA)** | | | |
| 1 | 1 | moor<br>marc | 0.5 for each correct answer.<br>0 for both incorrect answer. |
| 2 | 1 | 0826<br>3107 | 0.5 for each correct answer.<br>0 for both incorrect answers. |
| 3 | 2 | (i) dog<br>cat<br>goat<br>(ii) rose<br>jasmine<br>lotus | 2 marks for correct grouping of all names.<br>1 mark for atleast 1 correct group, i.e. dog and goat rose, jasmine or any other.<br>0 for incorrect grouping. |
| 4 | 1 | No. of groups 3 | 1 mark for correct answer.<br>0 marks for any other. |
| 5 | 5 | | 0.5 for every correct answer.<br>0 for all incorrect answers. |
| **Subtest VIII: Memory (M)** | | | |
| 1 | 3 | a measure tape;<br>a ruler;<br>a thermometer; | 1 mark for every correct answer.<br>0 for all incorrect answers. |
| 2 | 2 | -- | 2 marks for two and more correct answers.<br>1 mark for one correct answer.<br>0 for all incorrect answers. |

| Item No. | Maximum score | Correct Answer | Scoring |
|---|---|---|---|
| 3 | 5 | i) water<br>ii) flour<br>iii) glass<br>iv) cotton<br>v) steel or aluminium | 1 mark for each correct answer.<br>0 marks for all incorrect answers. |

**Subtest IX: Receptive Language (RL)**

| | | | |
|---|---|---|---|
| 1 | 4 | 1) football<br>2) false<br>3) b<br>4) a | 1 mark for every correct answer.<br>0 for all incorrect answers. |
| 2 | 2 | -- | 0.5 for every correct answer.<br>0 for all incorrect answers. |
| 3 | 2 | -- | 0.5 for every correct answer.<br>0 for all incorrect answers. |
| 4 | 2 | -- | 0.5 for every correct answers.<br>0 for all incorrect answers. |

**Subtest X: Expressive Language (EL)**

| | | | |
|---|---|---|---|
| 1 | 2 | -- | 0.5 for each grammatically correctly written sentence with no spelling error.<br>0 for all incorrect answers. |
| 2 | 2 | i) He<br>ii) The knives are very sharp.<br>iii) wrote<br>iv) Will you come home tomorrow Geeta? | 0.5 for every correct answer.<br>0 for all incorrect answers. |

| Item No. | Maximum score | Correct Answer | Scoring |
|---|---|---|---|
| 3 | 6 | -- | 6 marks for 6 or more sentences using correct grammar without any spelling errors.<br>5 marks for 5 correct sentences.<br>4 marks for 4 correct sentences.<br>3 marks for 3 correct sentences.<br>2 marks for 2 correct sentences.<br>1 mark for 1 correct sentence all correctly written without any spelling errors.<br>1 marks for writing just words (minimum 6 words).<br>0 for less than 6 words. |

# DIAGNOSTIC TEST OF LEARNING DISABILITY

## Consumable Booklet (16-0231-CB)

Smriti Swarup, Ph.D. and D. H. Mehta, Ph.D.

### INSTRUCTIONS

1. Read each question carefully and do as directed.
2. Do not turn the pages unless asked to.
3. Finish all the items on a page and wait for further instructions.
4. Try to answer all the questions. If you are unable to answer any question, proceed to the next.

| TO BE FILLED BY THE CHILD | FOR EXAMINER'S USE ONLY |
|---|---|
| Name : | Date of Birth : |
| Class : | Total time taken : |
| School : | Referred by : |
| Age : | |
| Date : | Referred for : |

### FOR EXAMINER'S USE ONLY

| Subtest | I | II | III | IV | V | VI | VII | VIII | IX | X | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Area | EHC | FG | FC | PS | SR | AP | CA | M | RL | EL | |
| Scores | | | | | | | | | | | |

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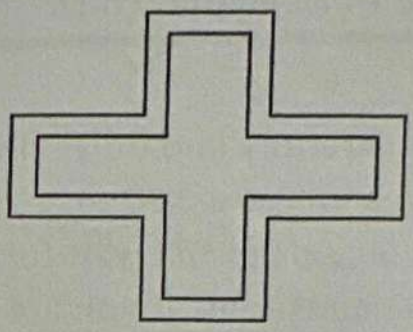
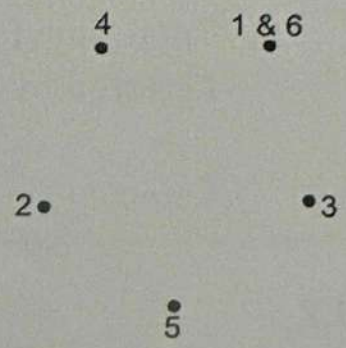
REORDER #RO 16-0231-CB

# Sub - Test I

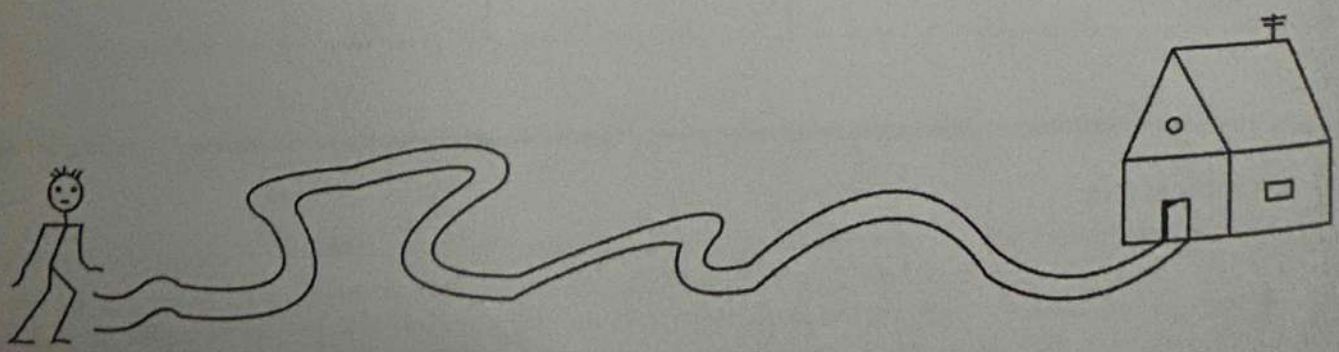
1. Draw a line in between the 2 lines drawn, without lifting your pencil. Do not touch or retrace the line. DO NOT USE A RULER.



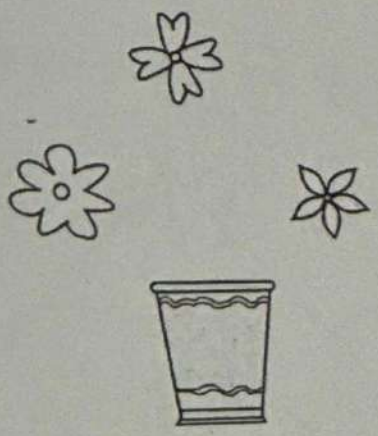
2. Join the numbers in their sequence, without lifting your pencil.




3. Help the boy find his house, without lifting your pencil. Do not touch or retrace the lines.

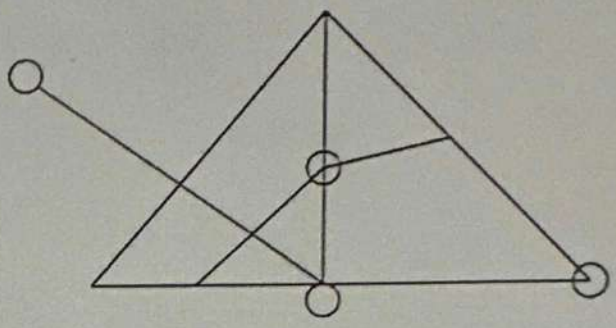


4. Draw the stems to complete the picture.

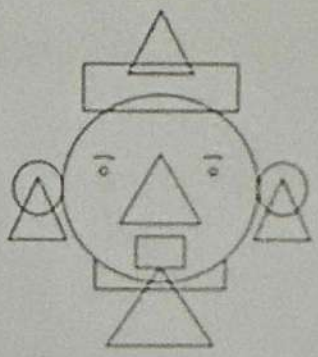


# Sub - Test II

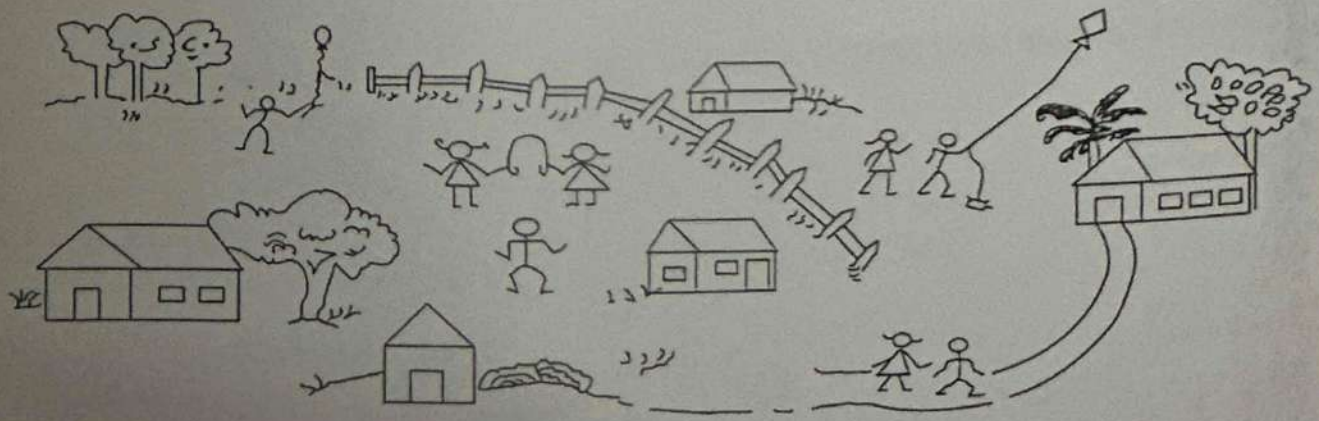
1. Tick ☑ all the circles ○ you see in this picture.



2. Tick ☑ the Triangles △ you can see in this picture.



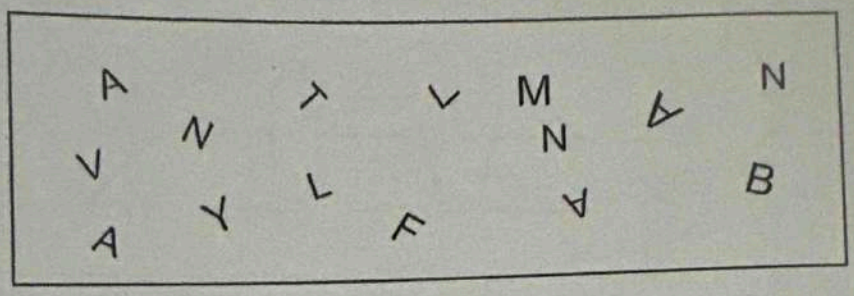
3. Underline all the girls 🧍 and the houses 🏠 with windows in this picture.



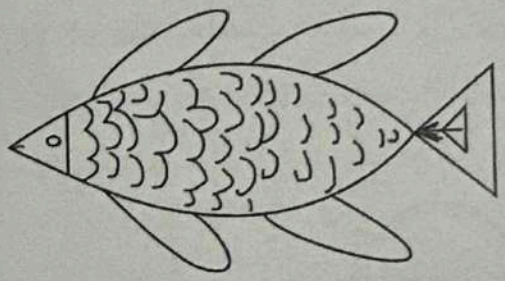
4. Tick ☑ all the 🍃 leaves in this picture.

# Sub - Test III

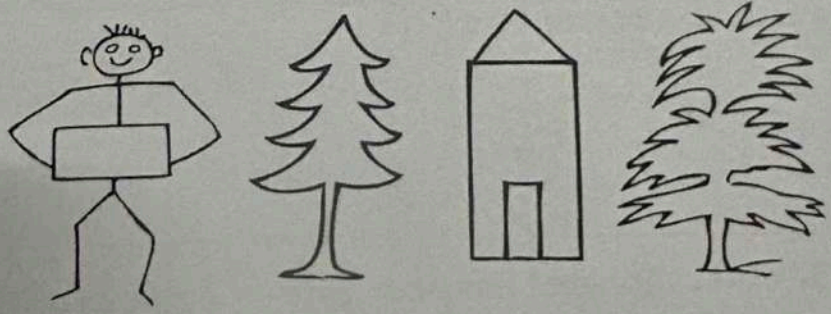
1. Underline all the 'A' you see in the box.




2. Tick all the triangles you can see in the given fish.



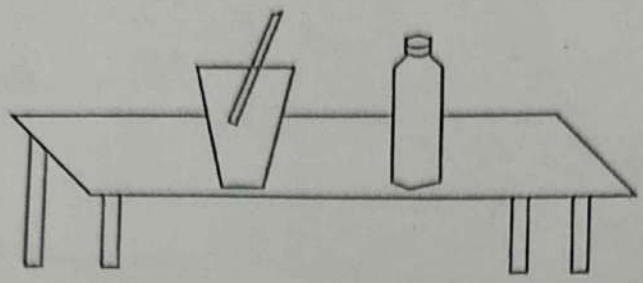
3. Underline the figures that have at least one rectangle.



4. Tick all the  shapes you see in this picture.

# Sub - Test IV

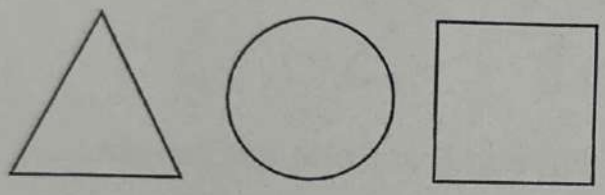
1. See the picture carefully. Fill in the blanks, by selecting the correct word, from the words given: on; under; in; next to; over.



a) The bottle is _____ the glass.

b) The straw is _____ the glass.

2. Three shapes are drawn below. Draw house using two shapes only.



3. Draw a face of a boy or a girl.

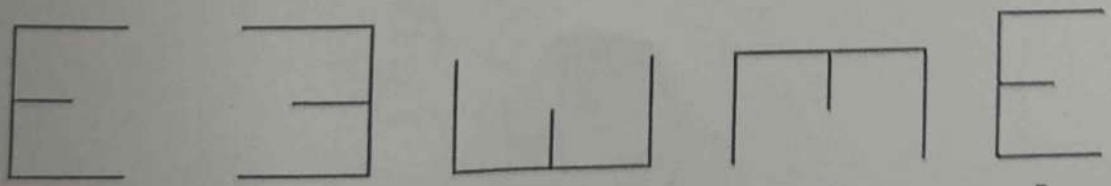
. Letter 'E' of the alphabet has been written down in different directions. Find out the 'E' (write only the number written below each 'E').

facing left _____

facing right _____

facing up _____

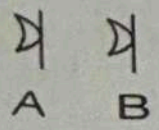
facing down _____



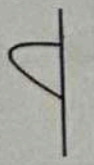
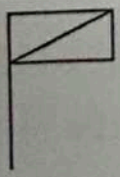
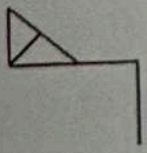
1 2 3 4 5

5. I. Draw the pattern in column 'B' as drawn in column 'A'.

Example:

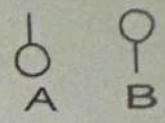



I

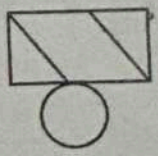
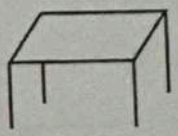
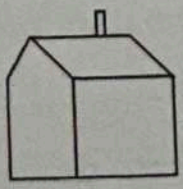
| A | B |
|---|---|
|  | |
|  | |
|  | |
|  | |

II. Invert the design shown in column 'A' in column 'B'.

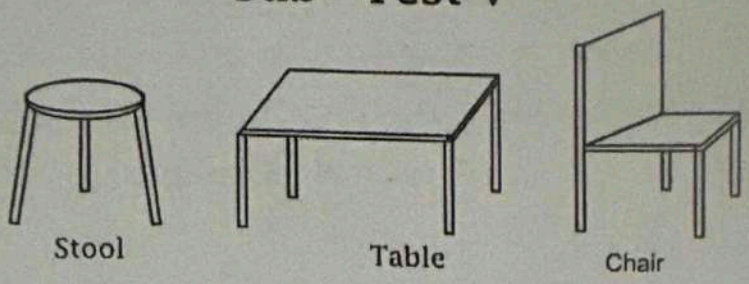
Example:




II

| A | B |
|---|---|
|  | |
|  | |
|  | |
|  | |

# Sub - Test V

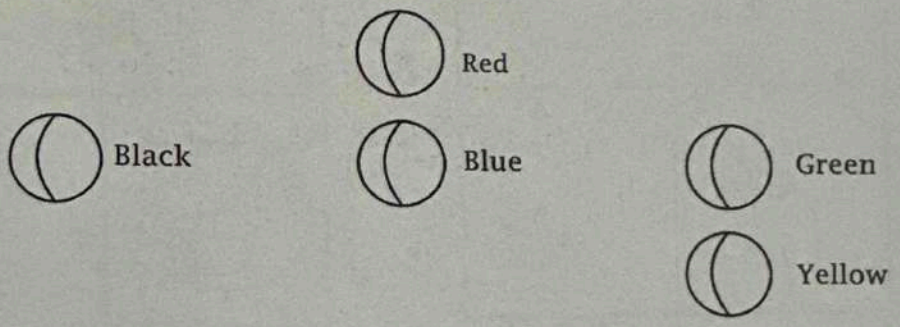



1 See the above arrangement of the table, stool and chair and fill in the blanks.

(i) The table is to the left of the _____

(ii)The _____ is to the right of the table.

2 Look carefully at the colours and places of the balls and fill in the blanks.




i) The _____ ball is above the yellow ball.

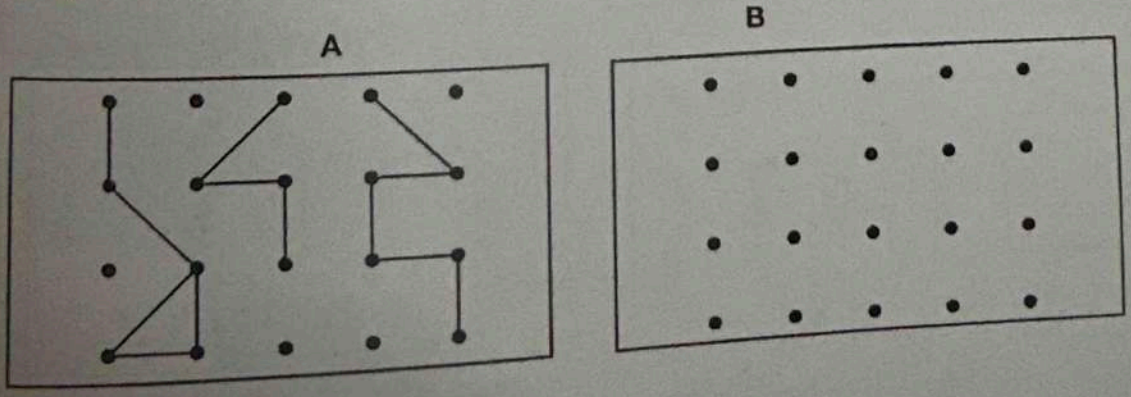
ii) The _____ ball is below the red ball.

iii) The blue ball is to the _____ of the green ball.

iv) The black ball is to the _____ of the blue ball.

v) The_____ ball is at the top of all the balls.

3. Copy the pattern drawn in Box 'A' in Box 'B'.



# Sub - Test VI

1. Listen carefully when I clap. Count the number of times I clap, in your mind. When I have finished clapping, from the numbersgiven below, tick the correct number.

   a) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

   b) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

2. Listen children. I am going to make some sounds in an order. Remember the order and tell the sequence in which the sounds were made.

   1) This is the sound of a clap.

   2) This is the sound of finger snapping.

   3) This is the sound of tapping the table with your palm.

   4) This is the sound of tapping the table with a pencil.

1._____ 2._____ 3._____ 4._____

3. Listen carefully to what I say. I am going to call out two words one after the other. Tell me whether they are the same or different by putting the tick mark in the appropriate column.

Example: tin bin same different ✓

| | Same | Different |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

4. Tick the word that sounds different from the rest of the words.

| | | | | |
|---|---|---|---|---|
| Example: | go | foe | ✓ run | row |
| i) | Run | Bun | Sun | Fur |
| ii) | Key | Hay | Bee | Tea |
| iii) | Pity | Fly | Cry | Try |
| iv) | Train | Rain | Bread | Brain |

5. a) Write 2 words (with at least 4 letters) starting with sound B (ब) and ending with sound D (ड).

_____ _____

b) Write 2 words (with at least 4 letters) starting with sound P (प) and ending with sound T (ट).

_____ _____

# Sub - Test VII

1. Reverse the letters of the word givenin column 'A' and write the new word in column 'B'.

| | A | B |
|---|---|---|
| Example: | but | tub |
| | room | _____ |
| | cram | _____ |

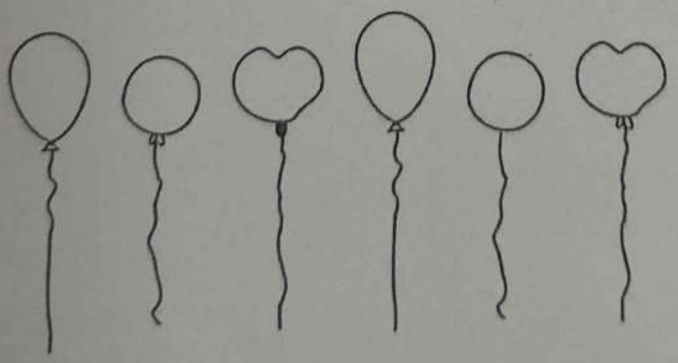
2. What will these numbers be when the order of their digits is reversed ?

| | | |
|---|---|---|
| Example: | 19 | 91 |
| | 6280 | _____ |
| | 7013 | _____ |

3. Put the following names into the groups they belong to:

a cat; a goat; a lotus; a dog; a rose; a jasmine;

4. Drawn below are a few balloons. Find out into how many groups you can divide them. Put a tick against the right answer.



No. of groups
1 2 3 4 5

5. Name two similarities between the given pair of words.

Example: water-melon and orange

1.both are round 2. both have seeds

i) an elephant and a lion _____

_____

ii) a table and a stool _____

_____

iii)sun and moon _____

_____

iv)a rose plant and a mango tree _____

_____

v)a napkin and a handkerchief _____

# Sub - Test VIII

1. Read the words given below. Underline all the things that are used to measure.

   a pair of scissors; a measure-tape; a knife; a blade; a weighing scale; a pencil; a ruler; a thermometer.

2. Name three play things that are round.

   i) _____

   ii) _____

   iii) _____

3. What am I made of ?

   Example: Curd — Milk

   i) Ice _____

   ii) Bread _____

   iii) Mirror _____

   iv) Cloth _____

   v) Pressure cooker _____

# Sub - Test IX

1. Raju and Ramu were friends. Ramu liked football and Raju liked cricket. Every evening they did their homework together. One day Raju fell down from the bus and broke his foot. He could not go to school for many days. Ramu would go to Raju's house every evening and teach him. Ramu would do his homework at Raju's house. After many days Raju went to school. The teacher was very happy to see that Raju had not missed lessons because of Ramu's help. She told the whole class that everybody must be friends like Raju and Ramu.

1. Answer the following:

i) Ramu liked _____ (football, hide and seek, cricket).

ii) Ramu went to Raju's house every morning._____ (True/False)

iii) Put a tick (✔) mark on the correct answer

Raju broke his foot because

a) he was running fast.

b) he fell from a bus.

c) he was pushed.

iv) The teacher was happy because _____

a) Raju had not missed much of his lessons.

b) Ramu did his homework at Raju's house.

c) Ramu was quiet in class.

2. Make 2 new words using four letters from the given word.

Example: garden near darn

1. beautiful _____ _____

2. education _____ _____

3. Write the names of four things seen in a garden.

_____

_____

_____

_____

4. Name any four parts of a tree.

_____

_____

_____

_____

# Sub - Test X

1. Write a sentence, using the name of each of the picture given, in the space provided.

a)  A) _____

b)  B) _____

c)  C) _____

d)  D) _____

2. Do as directed.

i) Ramesh is a clever boy. _____ stood first in the class. (Fill in the correct pronoun.)

ii) The knife is very sharp. (Rewrite the sentence using the plural from.)

_____

iii) I (to write) _____ a letter to Rita yesterday. (use the correct form of the given verb.)

iv) Come home tomorrow, Geeta. (Rewrite the sentence in a question form.) _____

3. Describe the given picture in your own words.